SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING:

1.1 Product identifier

Product Name                Eli-Patch Primer - Resin

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses                 Resin. Adhesive.

1.3 Details of the supplier of the safety data sheet

Supplier                    Eli-Chem Resins UK Ltd
                              Astra House
                              The Common
                              Cranleigh
                              GU6 8RZ
                              UK
                              01483 266636
                              sales@FixMaster.co.uk

1.4 Emergency telephone number    01483 266636 (office hours only)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (EC 1272/2008)       Physical and Chemical Hazards  Not classified.
                                      Human health                  Skin irrit. 2 – H315: Eye irrit. 2 – H319; Skin Sens. 1 – H317
                                      Environment                   Aquatic Chronic 2 – H411


The full text for all R-phrases and Hazard statements are displayed in Section 16.

2.2 Label elements

Contains      BISPHENOL F TYPE EPOXY RESIN
             EPOXY RESIN (Number average MW <= 700 )
             OXIRANE, MONO [(C12-14- ALKYOXY)METHYL] DERIVS

Label In Accordance With (EC) No. 1272/2008

Signal Word        Warning
Hazard Statements    H315   Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements

P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+351-338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P313 Get medical advice/attention.
P501 Dispose to licensed waste disposal site in accordance with local Waste Disposal Authority.

Supplemental label information

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash ... thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace. IF ON SKIN: Wash with plenty of soap and water.
P321 Specific treatment (see ... on this label).
P332+313 If skin irritation occurs: Get medical advice/attention.
P333+313 If skin irritation or rash occurs: Get medical advice/attention.
P337 If eye irritation persists:
P361 Take off contaminated clothing and wash before reuse.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.

Supplemental label information

EUH205 Contains epoxy constituents. May produce an allergic reaction.

2.3 Other hazards

Not Classified as PBT/vPvB by current EU criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

<table>
<thead>
<tr>
<th>BISPHENOL F TYPE EPOXY RESIN</th>
<th>15 – 17%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS-No.: 28064-14-4</td>
<td>EC No:</td>
</tr>
<tr>
<td>Classification (EC 1272/2008)</td>
<td></td>
</tr>
<tr>
<td>Skin Irrit. 2 - H315</td>
<td></td>
</tr>
<tr>
<td>Eye Irrit. 2 - H319</td>
<td></td>
</tr>
<tr>
<td>Skin Sens. 1 - H317</td>
<td></td>
</tr>
<tr>
<td>Aquatic Chronic 2 - H411</td>
<td></td>
</tr>
<tr>
<td>Classification 67/548/EEC)</td>
<td></td>
</tr>
<tr>
<td>R43</td>
<td></td>
</tr>
<tr>
<td>Xi; R36/38</td>
<td></td>
</tr>
<tr>
<td>N; R51/53</td>
<td></td>
</tr>
</tbody>
</table>
### EPOXY RESIN (Number average MW <= 700)

<table>
<thead>
<tr>
<th>CAS-No.: 25068-38-6</th>
<th>EC No.: 500-033-5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification (EC 1272/2008)</strong></td>
<td><strong>Classification 67/548/EEC)</strong></td>
</tr>
<tr>
<td>Skin Irrit. 2 - H315</td>
<td>R43</td>
</tr>
<tr>
<td>Eye Irrit. 2 - H319</td>
<td>Xi; R36/38</td>
</tr>
<tr>
<td>Skin Sens. 1 - H317</td>
<td>N; R51/53</td>
</tr>
<tr>
<td>Aquatic Chronic 2 - H411</td>
<td></td>
</tr>
</tbody>
</table>

### OXIRANE, MONO (C12-14- ALKYOXY)METHYL) DERIVS

<table>
<thead>
<tr>
<th>CAS-No.: 68609-97-2</th>
<th>EC No.:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Classification (EC 1272/2008)</strong></td>
<td><strong>Classification 67/548/EEC)</strong></td>
</tr>
<tr>
<td>Skin Irrit. 2 - H315</td>
<td>R43</td>
</tr>
<tr>
<td>Skin Sens. 1 - H317</td>
<td>Xi; R36/38</td>
</tr>
</tbody>
</table>

The full text for all R-phrases and hazard statements are displayed in Section 16.

**SECTION 4: FIRST AID MEASURES**

#### 4.1 Description of first aid measures

**General information**

**CAUTION!** First aid personnel must be aware of own risk during rescue! Consult a physician for specific advice.

**Inhalation**

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

**Ingestion**

DO NOT INDUCE VOMITING! Get medical attention immediately!

**Skin contact**

Remove contaminated clothing immediately and wash skin with soap and water: Get medical attention if any discomfort continues.

**Eye contact**

Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention immediately. Continue to rinse.

#### 4.2 Most important symptoms and effects, both acute and delayed

**Inhalation**

May cause irritation to the respiratory system.

**Ingestion**

No specific symptoms noted.

**Skin contact**

Skin irritation. Allergic rash.

**Eye contact**

Irritating and may cause redness and pain.
4.3 Indication of any immediate medical attention and special treatment needed

Treat Symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Inhalation
May cause irritation to the respiratory system.

Ingestion
No specific symptoms noted.

Skin contact
Skin irritation. Allergic rash.

Eye contact
Irritating and may cause redness and pain.

5.2 Special hazards arising from the substance or mixture

Unusual Fire & Explosion Hazards
Heat may cause the containers to explode.

Specific hazards
In case of fire, toxic gases may be formed. Phenolic. Carbon monoxide (CO). Water.

5.3 Advice for firefighters

Special Fire Fighting Procedures
Move container from fire area if it can be done without risk. Water spray should be used to cool containers. Avoid water in straight hose stream; will scatter and spread fire. Keep run-off water out of sewers and water sources. Dike for water control. Dike and collect extinguishing water.

Protective equipment for fire-fighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions. protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet. Do not smoke, use open fire or other sources of ignition. Avoid inhalation of vapours and contact with skin and eyes.

6.2 Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.

6.3 Methods and material for containment and cleaning up

Absorb with sand or other inert absorbent. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

6.4 Reference to other sections

Wear protective clothing as described in Section 8 of this safety data sheet. See section 11 for additional information on health hazards. Collect and dispose of spillage as indicated in section 13.
SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling
Keep away from heat, sparks and open flame. Wear full protective clothing for prolonged exposure and/or high concentrations. Provide good ventilation. Avoid inhalation of vapours/spray and contact with skin and eyes. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site.

7.2 Conditions for safe storage, including any incompatibilities
Store in tightly closed original container in a dry, cool and well-ventilated place. Keep away from food, drink and animal feeding stuffs. Keep away from heat, sparks and open flame.

7.2 Specific end use(s)
The identified uses for this product are detailed in Section 1.2.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling
Keep away from heat, sparks and open flame. Wear full protective clothing for prolonged exposure and/or high concentrations. Provide good ventilation. Avoid inhalation of vapours/spray and contact with skin and eyes. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site.

7.2 Conditions for safe storage, including any incompatibilities
Store in tightly closed original container in a dry, cool and well-ventilated place. Keep away from food, drink and animal feeding stuffs. Keep away from heat, sparks and open flame.

7.3 Specific end use(s)
The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters
Ingredient Comments
No exposure limits noted for ingredient(s).

8.2 Exposure controls
Protective equipment

Engineering measures
Provide adequate general and local exhaust ventilation.
Respiratory equipment
In case of inadequate ventilation use suitable respirator.

**Hand protection**
Protective gloves are recommended. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

**Eye protection**
Wear goggles/face shield.

**Other Protection**
Provide eyewash station and safety shower.

**Hygiene measures**
Wash hands at the end of each work shift and before eating, smoking and using the toilet. Wash hands after contact. Wash hands after handling.

**Skin protection**
Wear apron or protective clothing in case of contact.

**Environmental Exposure Controls**
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Liquid</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>Various colours</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Mild</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>Insoluble in water</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range (°C)</strong></td>
<td>&gt;200</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>1.12 g/cm³ 20 C</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>1200 – 1600 cP 25 C</td>
</tr>
<tr>
<td><strong>Decomposition temperature (°C)</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Odour threshold, lower</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Odour threshold, upper</strong></td>
<td>Not available</td>
</tr>
<tr>
<td><strong>Flashpoint (°C)</strong></td>
<td>&gt; 150 CC (Closed cup)</td>
</tr>
<tr>
<td><strong>Auto ignition temperature (°C)</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Flammability Limit – lower (%)</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Flammability Limit – upper (%)</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Partition Coefficient</strong></td>
<td>log Pow - 3.242 (CAS 25068-38-6) 3-5 (CAS 28064-14-4) 3.77 (CAS 68609-97-2)</td>
</tr>
<tr>
<td>(N-Octanol/Water)</td>
<td></td>
</tr>
<tr>
<td><strong>Explosive properties</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Oxidising properties</strong></td>
<td>Not available</td>
</tr>
</tbody>
</table>

### 9.2 Other Information

Not available. Not determined.
SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of hazardous reactions

Hazardous Polymerisation
May polymerise.
Polymerisation Description
Avoid heat. Avoid contact with: Amines.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition.

10.5 Incompatible materials

Material to avoid

10.6 Hazardous decomposition products

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Phenolic. Water. Carbon monoxide (CO).

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Toxic Dose 1 - LD 50
>2000 mg/kg (oral rat)
Other Health Effects
This substance has no evidence of carcinogenic properties.

Acute toxicity:
Acute Toxicity (Dermal LD50)
> 2000 mg/kg Rabbit
Acute Toxicity (Inhalation LC50)
Not determined.

Respiratory or skin sensitisation:
Skin sensitisation
Guinea Pig
Sensitising.

Germ cell mutagenicity:
Genotoxicity - In Vitro
Not available.
Genotoxicity - In Vivo
Not available.

Reproductive Toxicity:
Reproductive Toxicity - Fertility
Not available.
Does not contain any substances known to be toxic to reproduction.

Specific target organ toxicity - single exposure:
STOT - Single exposure
Not available.

Specific target organ toxicity - repeated exposure:
STOT - Repeated exposure
Not available.

Inhalation
May cause irritation to the respiratory system.

Ingestion
No specific health warnings noted.

Skin contact
Irritating to skin. May cause sensitisation by skin contact.

Eye contact
Irritating to eyes.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity
Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

12.1 Toxicity

LG 50, 96 Hrs, Fish mg/l (GAS 25068-38-6) 2 mg/l (GAS 68609-97-2) >5000 mg/l
EC 50, 48 Hrs. Daphnia, mg/l (GAS 25068-38-6) 2 mg/l (GAS 68609-97-2) >5000 mg/l
Acute Toxicity - Aquatic Plants Not available.
Acute Toxicity – Microorganisms Not available.
Chronic Toxicity - Fish Early life Stage Not available.
Chronic Toxicity - Aquatic Invertebrates NOEC 21 days (GAS 25068-38-6) 0.3 mg/l Daphnia magna
Acute Toxicity – Terrestrial Not available.
12.2 Persistence and degradability

Degradability
The product is not readily biodegradable.

Biodegradation
Degradation (12%) (GAS 25068-38-6) 28 days
Degradation (87%) (GAS 68609-97-2) 28 days

12.3 Bioaccumulative potential

Bioaccumulation factor
BCF 160 (GAS 68609-97-2)
Partition coefficient
log Pow - 3.242 (CAS 25068-38-6) 3-5 (GAS 28064-14-4) 3.77 (GAS 68609-97-2)

12.4 Mobility in soil

Mobility:
No data available.
Absorption/desorption Coefficient
Soil Koc - 1, 800-4, 400 (GAS 25068-38-6) >5000 (GAS 68609-97-2)

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria.

12.6 Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

General information
Waste is classified as hazardous waste. Disposal to licensed waste disposal site in accordance with the local Waste Disposal Authority.

13.1 Waste treatment methods

Dispose of waste and residues in accordance with local authority requirements.

SECTION 14: TRANSPORT INFORMATION

14.1 UN Number

UN No. (ADRIRID/ADN) 3082
UN No. (IMDG) 3082
UN No. (ICAO) 3082
14.2 UN proper shipping name

Proper shipping name  ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Epoxy resin)

14.3 Transport hazard class(es)

ADR/RID/ADN Class  9
ADR/RID/ADN Class  Class 9: Miscellaneous dangerous substances and articles.
ADR Label No.  9
IMDG Class  9
ICAO Class/Division  9

Transport labels

14.4 Packing group

ADR/RID/ADN Packing group  III
IMDG Packing group  III
ICAO Packing group  III

14.5 Environmental hazards

Environmentally Hazardous substance/marine pollutant

14.6 Special precautions for user

EMS  F-A, S-F
Emergency Action Code  3Z
Hazard No. (ADR)  90
Tunnel Restriction Code (E)

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
UK Regulatory References
Environmental Listing
Approved Code Of Practice
Safety Data Sheets for Substances and Preparations. Classification and Labelling of Substances and Preparations Dangerous for Supply.
Guidance Notes
CHIP for everyone HSG(108). Introduction to Local Exhaust Ventilation HS(G)37. Workplace Exposure Limits EH40. EU Legislation
Dangerous Preparations Directive 1999/45/EC.
National Regulations
Health and Safety at Work Act (As Amended) 1974
Control of Substances Hazardous to Health Regulations 2002 (as amended)

15.2 Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Risk Phrases In Full
R36/38 Irritating to eyes and skin.
R38 Irritating to skin.
R43 May cause sensitization by skin contact.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Hazard Statements In Full
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Disclaimer: This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.
SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING:

1.1 Product identifier
Product Name          Eli-Patch Primer - Hardener

1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.
Application of the substance / the mixture Hardening agent/ Curing agent

1.3 Details of the supplier of the safety data sheet
Supplier                Eli-Chem Resins UK Ltd
                        Astra House
                        The Common
                        Cranleigh
                        GU6 8RZ
                        UK
                        01483 266636
                        sales@FixMaster.co.uk

1.4 Emergency telephone number
                        01483 266636 (office hours only)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
Acute Toxicity          Oral Category 4 H302 Harmful if swallowed.
Skin Corrosion          Category 1B H314 Causes severe skin burns and eye damage.
Skin sensitisation      Category 1 H317 May cause an allergic skin reaction.
Specific target organ   Toxicity – repeated exposure Category 2 H373 May cause damage to organs through prolonged or repeated exposure.
Chronic aquatic toxicity Category 3 H412 Harmful to aquatic life with long lasting effects.

2.2 Label elements
The product is classified and labeled according to the CLP regulation.
Hazard pictograms

GHS08
GHS05
Eli–Patch Primer
Hardener
Revision Date 03.11.2016 Version 1

GHS07

Signal word Danger

Hazard statements

H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P305+P351+P338IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.

2.3 Other hazards

Corrosive
Components of the product may affect the nervous system.
May cause sensitization by skin contact.
Harmful if swallowed.
Harmful in contact with skin.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Components</th>
<th>EINECS/ELINCS Number</th>
<th>CAS Number</th>
<th>Concentration (Weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4,4’-Methylenebis (cyclohexylamine)</td>
<td>217-168-8</td>
<td>1761-71-3</td>
<td>&gt; 2.5% - &lt; 10%</td>
</tr>
<tr>
<td></td>
<td>Methyleneoxide, polymer with benzenamine, hydrogenated</td>
<td>603-894-6</td>
<td>135108-88-2</td>
<td>&gt; 20%</td>
</tr>
<tr>
<td></td>
<td>Benzyl alcohol</td>
<td>202-859-9</td>
<td>100-51-6</td>
<td>&gt; 25%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>Classification (CLP)</th>
<th>REACH Reg. #</th>
</tr>
</thead>
</table>
| 4,4’-Methylenebis (cyclohexylamine) | Acute Tox. Oral 4 ;H302 
Skin Sens. 1 ;H317 
STOT RE Oral 2 ;H373 
Skin Corr. 1B ;H314 | 01-2119541673-38 |
| Methyleneoxide, polymer with benzenamine, hydrogenated | Acute Tox. Oral 4 ;H302 
Skin Corr/Irrit 1C ;H314 
Skin Sens. 1 ;H317 
STOT RE Oral 2 ;H373 
Aquatic Chronic 3 ;H412 | 01-2119983522-33 |
| Benzyl alcohol | Acute Tox. Inha 4 ;H332 
Acute Tox. Oral 4 ;H302 | 01-2119492630-38 |
The full text for all R-phrases and hazard statements are displayed in Section 16.

**SECTION 4: FIRST AID MEASURES**

4.1 Description of first aid measures

**General information**
Seek medical advice. If breathing has stopped or is laboured, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.

**Eye Contact**
Hold eyelids apart, initiate and maintain gentle and continuous irrigation until the patient received medical care. If medical care is not promptly available, continue to irrigate for one hour.

**Skin Contact**
Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Flush immediately with copious amounts of water. Initiate and maintain continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Cover wound with sterile dressing. Take off contaminated clothing and shoes immediately.

**Ingestion**
Do not induced vomiting without medical advice. Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim’s head to the side.

**Inhalation**
Move to fresh air.

4.2 Most important symptoms and effects, both acute and delayed
No data available.

4.3 Indication of any immediate medical attention and special treatment needed

**Treatment**
NOTE TO PHYSICIANS: Application of corticosteroid cream has been effective in treating skin irritation.

**SECTION 5: FIREFIGHTING MEASURES**

5.1 Extinguishing media

**Suitable extinguishing agents**
Alcohol-resistant foam, Carbon dioxide (CO2), dry chemical, dry sand, limestone powder.

**Extinguishing media which must not be used for safety reasons**
No data available.

5.2 Special hazards arising from the substance or mixture

5.3 Advice for firefighters
Avoid contact with the skin. A face shield should be worn. Use personal protective equipment. Wear self-contained breathing apparatus for firefighting if necessary.

**Additional information**
Do not allow run-off from firefighting to enter drains or water courses. Fire residues and contaminated firefighting water must be disposed of in accordance with local regulations.
SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions. protective equipment and emergency procedures
Wear suitable protective clothing, gloves and eye/face protection. Use self-contained breathing apparatus and chemically protective clothing. Evacuate personnel to safe areas.

6.2 Environmental precautions
Construct a dike to prevent spreading.

6.3 Methods and material for containment and cleaning up
Approach suspected leak areas with caution. Place in appropriate chemical waste container. Additional advice: If possible, stop flow of product.

6.4 Reference to other sections
For more information refer to Sections 8 & 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling
Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Avoid contact with skin and eyes. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Use personal protective equipment. When using, do not eat, drink or smoke.

7.2 Conditions for safe storage, including any incompatibilities
Do not store near acids. Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3 Specific end use(s)
Storage temperature: 5 – 35°C

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure controls

Engineering Measures: Provide readily accessible eye wash stations and safety showers. Provide natural or explosion-proof ventilations adequate to ensure concentrations are kept below exposure limits.

Personal protective equipment
Hand protection: Chemical resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicated this is necessary.
Butyl-rubber
Nitrile rubber
Neoprene gloves
Impervious gloves
PVC disposable
Eye/face protection: Full face shield with goggles underneath.
Skin and body protection: Impervious clothing, Full rubber suit (rain gear). Rubber or plastic boots.
Special instructions for protection and hygiene: Discard contaminated leather articles. Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Wash hands at the end of each work shift and before eating, smoking or using the toilet. Provide readily accessible eye wash stations and safety showers.
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

**Appearance**  
Liquid. Yellow.

**Odour**  
Ammoniacal.

**Density**  
1.0 g/cm³ (62.428 lb/ft³)

**Relative density**  
No data available.

**Melting point/freezing point**  
< 32 °F (<0 °C)

**Boiling point and boiling range (°C)**  
>392°F (> 200 °C) at 14.69 psia (1.01 bara)

**Vapour pressure**  
2.00 mmHg at 70 °F (21 °C)

**Water solubility**  
No data available.

**Partition coefficient (n-octanol/water)**  
No data available.

**pH**  
Alkaline.

**Viscosity**  
150 mPa.s at 77 °F (25 °C)

**Flammability limits**  
Not applicable.

**Flammability**  
> 200 °F (> 93.3 °C)

**Autoignition temperature**  
No data available.

**Decomposition temperature**  
No data available.

9.2 Other Information

**Explosive properties**  
No data available.

**Oxidizing properties**  
No data available.

**Odour threshold**  
No data available.

**Evaporation rate**  
No data available.

**Relative vapour density**  
Not applicable.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Refer to possibility of hazardous reactions and/or incompatible materials.

10.2 Chemical stability

**Thermal decomposition/conditions to be avoided:**

Stable under normal conditions.

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

No data available.

10.5 Incompatible materials

Reactive materials (e.g. sodium, calcium, zinc, etc).

Materials reactive with hydroxyl compounds.
CAUTION! N-Nitrosamines, many of which are known to be potent carcinogens, may be formed when the product comes in contact with nitrous acid, nitrites or atmospheres with high nitrous oxide concentrations.
Nitrous acid and other nitrosating agents.
Organic acids (i.e. acetic acid, citric acid etc).
Mineral acids.
Sodium hypochlorite.
Product slowly corrodes copper, aluminium, zinc and galvanized surfaces.
Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion.
Oxidizing agents.

10.6 Hazardous decomposition products
Nitric acid.
Ammonia.
Nitrogen oxides (NOx).
Nitrogen oxide can react with water vapours to form corrosive nitric acid.
Carbon monoxide.
Carbon dioxide (CO2).
Aldehydes.
Flammable hydrocarbon fragments.
Nitrosamine.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Likely routes of exposure

Effects on eye: Corneal edema may give rise to a perception of ‘blue haze’ or ‘fog’ around lights. Exposed individuals may see rings around the bright lights. This effect is temporary and has no known residual effect. Product vapour can cause glaucoma (corneal edema) when absorbed into the tissue of the eye from the atmosphere. Causes eye burns. May cause blindness.
Effects on skin: Causes skin burns. If absorbed through the skin, may cause central nervous system effects, such as headache, nausea, dizziness, confusion, breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Harmful in contact with skin.
Inhalation effects: Can cause severe eye, skin and respiratory tract burns. May cause central nervous system effects, such as headache, nausea, dizziness, confusion, breathing difficulties. Severe cases of over exposure can result in respiratory failure.
Ingestion effects: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach. Harmful if swallowed.
Symptoms: No data available.

Acute toxicity

Acute oral toxicity : No data available on the product itself.

Acute oral toxicity – Components

Methylenebiscyclohexanamine,4,4’- LD50 : 625 mg/kg Species: Rat
Methyleneoxide, polymer with Benzamine, hydropgenated LD50: 367/mg/kg Species: Rat
Benxyl alcohol  
LD50 : 1,230 mg/kg  
Species: Rat

Acute inhalation toxicity: No data available on the product itself.

Inhalation – Components  
Benxyl alcohol  
LC50 (4 h) : > 4.178 mg/l  
Species: Rat

OECD Test Guideline 403

Acute dermal toxicity: No data available on the product itself.

Acute dermal toxicity – Components  
Benxyl alcohol  
LD50 : > 4.178 mg/l  
Species: Rat

OECD Test Guideline 403

Methylenebiscyclohexanamine, 4,4'-  
LD50 : 2,110 mg/kg  
Species: Rabbit

Methyleneoxide, polymer with  
Benzeamine, hydropgenated  
LD50 : > 2,000 mg/kg  
Estimated  
Species: Rabbit

Benxyl alcohol  
LD50 : 2,000 mg/kg  
Species: Rabbit

Skin corrosion/irritation  
No data available.

Serious eye damage/eye irritation  
No data available.

Sensitization  
May cause sensitization of susceptible persons by skin contact. Dermal sensitization to this product or component has been seen in some humans. Component of this product has been found to cause mild skin sensitization in guinea pigs.

Chronic toxicity or effects from long term exposure

Carcinogenicity  
No data available.

Reproductive toxicity  
No data available on the product itself.

Germ cell mutagenicity  
No data available on the product itself.

Specific target organ systematic toxicity (single exposure)  

Specific target organ systematic toxicity (repeated exposure)  
Mixed polycycloaliphatic amines was tested in rats for systemic effects in a subchronic (28 day) oral study at doses ranging from 15 to 300 mg/kg/day. Effects seen at 300 mg/kg/day included decreased survival, decreased body weight gain, increased liver, kidney and adrenal weights and histological changes in the liver, kidney, adrenals and spleen. The No-Observed-Adverse-Effect-Level (NOAEL) was 15 mg/kg/day. This product contains no listed carcinogens according to Directive 67/548/EEC, IARC, ACGIH and/or NTP in concentrations of 0.1 percent or greater. May cause allergic skin reaction.

Aspiration hazard  
No data available.
SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic toxicity: No data is available on the product itself.

Toxicity to fish – Components
- Methylenebiscyclohexanamine, 4,4’-LC50 (96 h) : >46 mg/l Species: Golden orfe (Leuciscus idus)
- Methylenebiscyclohexanamine, 4,4’-LC50 (96 h) : >100 mg/l Species: Golden orfe (Leuciscus idus)
- Benzyl alcohol LC50 (96 h) : 10 mg/l Species: Bluegill sunfish (Lepomis macrochirus)
- Benzyl alcohol LC50 (96 h) : 460 mg/l Species: Fathead minnow (Pimephales promelas)

Toxicity to daphnia – Components
- Methylenebiscyclohexanamine, 4,4’-EC50 (48 h) : 6.84 mg/l Species: Daphnia.

Toxicity to algae – Components
- Methylenebiscyclohexanamine, 4,4’-IC50 (72 h) : 140 - 200 mg/l Species: Algae.
- Benzyl alcohol IC50 (72 h) : 700 mg/l

Toxicity to other organisms
- No data is available on the product itself.

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
No data is available on the product itself.

Bioaccumulation – Components
- Methyleneoxide, polymer with benzenamine, hydrogenated Does not bioaccumulate.
- Benzyl alcohol Low bioaccumulation potential.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
No data available.

12.6 Other adverse effects
No data available.

Effect on the ozone layer
- Ozone depleting potential No data available.
- Global warming potential No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Contaminated packaging: Dispose of container and unused contents in accordance with local requirements.
SECTION 14: TRANSPORT INFORMATION

14.1 UN Number
ADR
UN/ID No. : UN2735
Proper shipping name : AMINES LIQUID, N.O.S., (Cycloaliphatic amine, Mixed Cycloaliphatic amines)
Class or division : 8
Packing Group : III
Tunnel code : (E)
Label(s) : 8
ADR/RID hazard id no. : 80
Marine pollutant : No

IATA
UN/ID No. : UN2735
Proper shipping name : Amines, liquid, corrosive, n.o.s., (Cycloaliphatic amine, Mixed Cycloaliphatic amines)
Class or division : 8
Packing Group : III
Label(s) : 8
Marine pollutant : No

IMDG
UN/ID No. : UN2735
Proper shipping name : AMINES LIQUID, N.O.S., (Cycloaliphatic amine, Mixed Cycloaliphatic amines) Class or division : 8
Packing Group : III
Label(s) : 8
Marine pollutant : No

RID
UN/ID No. : UN2735
Proper shipping name : AMINES LIQUID, N.O.S., (Cycloaliphatic amine, Mixed Cycloaliphatic amines)
Class or division : 8
Packing Group : III
Label(s) : 8
Marine pollutant : No

Further Information
The transportation information is not intended to convey all specific regulatory data relating to this material.

UN No. (ADR/IRID/ADN) 3082
UN No. (IMDG) 3082
UN No. (ICAO) 3082
SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU EINECS Included on EINECS inventory or polymer substance, monomers included on EINECS Inventory or no longer polymer.


15.2 Chemical Safety Assessment

No data available.

SECTION 16: OTHER INFORMATION

Ensure all national/local regulations are observed.

Hazard Statements:
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.
H373a May cause damage to organs through prolonged or repeated exposure if swallowed.
H412 Harmful to aquatic life with long lasting effects.

Indication of Method:
Acute toxicity Category 4 Harmful if swallowed. Calculation method.

Skin corrosion Category 1B Causes severe skin burns and eye damage. Calculation method.

Skin sensitization Category 1 May cause an allergic skin reaction. Calculation method.

Specific target organ toxicity – repeated exposure Category 2 May cause damage to organs through prolonged or repeated exposure. Calculation method.

Chronic aquatic toxicity Category 3 Harmful to aquatic life with long lasting effects. Calculation method.

Abbreviations and acronyms:
ATE: Acute Toxicity Estimate
CLP: Classification Labelling Packaging
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS#: Chemical Abstracts Service Number
PPE: Personal Protection Equipment
Kow – octanol-water partition coefficient
DNEL: Derived No-Effect Level
LC50: Lethal Concentration to 50% of a test population
LD50: Lethal Dose to 50% of a test population (Median Lethal Dose)
NOEC: No Observed Effect Concentration
PNEC: Predicted No Effect Concentration
RMM: Risk Management Measure
OEL: Occupational Exposure Limit
PBT: Persistent, Bioaccumulative and Toxic
vPvB: Very Persistent and Very Bioaccumulative
STOT: Specific Target Organ Toxicity
CSA: Chemical Safety Assessment
EN: European Standard
UN: United Nations
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail
WGK: Water Hazard Class

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